Claims

We claim:

1. A method of controlling an end device that includes an operating system that controls media manipulation to provide a quality of service specified by a user, the method comprising:

receiving an input specifying a demand for a quality of service;

monitoring a quality of service provided to determine whether the quality of service provided meets the quality of service demanded; and

when the quality of service provided is less than the quality of service demanded, using a software agent to assert dynamic control over the operating system to increase resources allocated to the media manipulation to improve the quality of service provided.

2. The method of claim 1, in which:

the end device is connected to a network to which an additional end device is connected;

the quality of service perceived by the user of the end device depends on media signals sent by the additional end device; and

the method additionally comprises:

using the software agent to issue instructions to the additional end device, and

using a further software agent located in the additional end device to perform a bit rate control operation in response to the instructions issued by the software agent, the bit rate control operation improving the quality of service at the end device.

3. The method of claim 2, in which:

the software agent additionally passes data indicating the quality of service demanded to the additional software agent; and

the additional software agent performs the bit rate control operation in response to the data indicating the quality of service demanded.

4. The method of claim 3, in which the additional software agent performs the bit rate control operation by causing the additional end device to change one of the following parameters of the media signal transmitted by the additional end device:

a number of quantizing levels applied to a video signal,

a frame rate of the video signal;

a picture size of the video signal;

bandwidth and number of quantizing bits of an audio signal; and

a media synthesis and compounding state of the video and audio signals.

5. The method of claim 2, in which:

more than one additional end device is connected to the network;

each additional end device transmits a media signal to the end device;

the quality of service perceived by the user of the end device depends on media signals sent by each additional end device; and

the method additionally comprises:

receiving a priority input assigning a priority to each additional end device,

using the software agent to issue instructions to an additional end device having a lowest one of the priorities assigned by the priority input.

6. The method of claim 1, in which the software agent causes the operating system to increase resources allocated to the media manipulation by one of:

changing a priority level of the media manipulation, and

increasing CPU time allocated to the media manipulation.

7. The method of claim 6, in which:

the end device is connected to a network to which an additional end device is connected;

the quality of service perceived by the user of the end device depends on media signals sent by the additional end device; and

the method additionally comprises:

using the software agent to issue instructions to the additional end device, and

using a further software agent located in the additional end device to perform a bit rate control operation in response to the instructions issued by the software agent, the bit rate control operation improving the quality of service at the end device.

8. The method of claim 7, in which:

the software agent additionally passes data indicating the quality of service demanded to the additional software agent; and

the additional software agent performs the bit rate control operation in response to the data indicating the quality of service demanded.

9. The method of claim 8, in which the additional software agent performs the bit rate control operation by causing the additional end device to change one of the following parameters of the media signal transmitted by the additional end device:

a number of quantizing levels applied to a video signal,

a frame rate of the video signal;

a picture size of the video signal;

bandwidth and number of quantizing bits of an audio signal; and

a media synthesis and compounding state of the video and audio signals.

10. The method of claim 8, in which:

more than one additional end device is connected to the network;

each additional end device transmits a media signal to the end device;

the quality of service perceived by the user of the end device depends on media signals sent by each additional end device; and

the method additionally comprises:

receiving a priority input assigning a priority to each additional end device,

using the software agent to issue instructions to an additional end device having a lowest one of the priorities assigned by the priority input.

11. A system including an end device adapted to provide a quality of service specified by a user, the end device comprising:

an operating system;

resources operating in response to the operating system to perform tasks including media manipulation;

an input device configured to receive parameters specifying a demand for a quality of service;

a quality of service monitor that monitors a quality of service provided to determine whether the quality of service provided meets the quality of service demanded; and

a software agent that operates in response to the quality of service monitor and that, when the quality of service provided is less than the quality of service demanded, asserts dynamic process control over the operating system to increase an allocation of the resources to performing the media manipulation to improve the quality of service provided.

12. The system of claim 11, in which:

the system additionally includes a network to which the end device and an additional end device are connected;

the quality of service perceived by the user of the end device depends on media signals sent through the network by the additional end device; and

the software agent additionally issues instructions to the additional end device, and

the system additionally includes a further software agent located in the additional end device to perform a bit rate control operation in response to the instructions issued by the software agent, the bit rate control operation improving the quality of service at the end device.

13. The system of claim 12, in which:

the software agent additionally passes parameters indicating the quality of service demanded to the additional software agent; and

the additional software agent performs the bit rate control operation in response to the parameters indicating the quality of service demanded.

14. The system of claim 13, in which the additional software agent performs the bit rate control operation by causing the additional end device to change one of the following parameters of the media signal transmitted by the additional end device:

a number of quantizing levels applied to a video signal,

a frame rate of the video signal;

a picture size of the video signal;

bandwidth and number of quantizing bits of an audio signal; and

a media synthesis and compounding state of the video and audio signals.

15. The system of claim 12, in which:

the system additionally includes more than one additional end device connected to the network;

each additional end device transmits a media signal to the end device through the network;

the quality of service perceived by the user of the end device depends on media signals sent by each additional end device;

the input device is additionally configured to receive a priority input assigning a priority to each additional end device;

the software agent additionally issues instructions through the network to an additional end device having a lowest one of the priorities assigned by the priority input.

16. The system of claim 11, in which the software agent causes the operating system to increase the allocation of the resources to performing the media manipulation by one of:

changing a priority level of the media manipulation; and

increasing CPU time allocated to the media manipulation.